Atomospheric Transport of Persistent Organic Pollutants to Cheeka Peak Observatory from 2002-2004

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Ambient Hi-vol air samples were collected between August 6th, 2002, and March 18th, 2004, at Cheeka Peak Observatory (CPO), located on the tip of the Olympic Peninsula, Washington State. This research, which includes some of the first measurements of anthropogenic semi-volatile organic compounds (SOCs) in the Pacific Northwest, measured the levels of polycyclic aromatic hydrocarbons (PAHs) and various current-use and historical-use pesticides at CPO. Eighteen PAHs were measured, including SOCs produced from biomass and/or diesel combustion. Commonly found PAHs in this group are phenanthrene, fluoranthene, pyrene, and retene. Representatives of various classes of pesticides were measured, including organochlorines (HCHs, HCB, and DDT), organophosphates (malathion and diazinon), and triazines (atrazine and simazine). The potential sources of the compounds measured are also discussed; both by the utilization of diagnostic ratios and the air mass back trajectories calculated using HYSPLIT4. Additional data is needed to confirm the sources of anthropogenic SOCs to CPO, either as a result of regional sources or the result of Trans-Pacific long-range transport.